

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Original) An optical resonator comprising at least one optical cavity defined by at least two mirror structures in which at least one of the mirror structures has a mirror profile having a diameter and sag that are selected in combination with a length of the cavity to degrade a stability of transverse modes with mode numbers 4 and greater.
13. (Original) A resonator as claimed in claim 12, wherein the length of the optical cavity is less than about 50 micrometers, the sag of the mirror profile is less than about 200 nanometers, and a full width at half maximum diameter of the mirror profile is less than 30 micrometers.

14. (Original) A resonator as claimed in claim 12, wherein the length of the optical cavity is less than about 30 micrometers, the sag of the mirror profile is less than about 150 nanometers, and a full width at half maximum diameter of the mirror profile is less than 20 micrometers.

15. (Original) A resonator as claimed in claim 12, wherein the length of the optical cavity is less than about 20 micrometers, the sag of the mirror profile is less than about 100 nanometers, and a full width at half maximum diameter of the mirror profile is less than 15 micrometers.

16. (Original) A resonator as claimed in claim 12, wherein the sag of the mirror profile is less than about 150 nanometers.

17. (Original) A resonator as claimed in claim 12, wherein the sag of the mirror profile is less than about 100 nanometers.

18. (Original) A resonator as claimed in claim 12, wherein an optical distance between the mirror structures is tunable.

19. (Original) A resonator as claimed in claim 12, wherein an optical distance between the mirror structures is tunable by out-of-plane deflection of one of the mirror structures.

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Previously presented) A resonator as claimed in claim 12, wherein a net profile of the mirror structures is concave in a center region surrounding an optical axis and flat and/or convex in an annular region surrounding the center region, and wherein the diameter and sag of the center region degrades the stability of transverse modes with mode numbers 4 and greater.

29. (new) An optical resonator comprising at least one optical cavity defined by at least two mirror structures in which at least one of the mirror structures has a mirror profile having a diameter and sag, wherein the diameter and sag in combination with a length of the cavity degrade a stability of transverse modes with mode numbers 4 and greater.